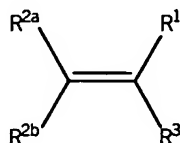


(I)



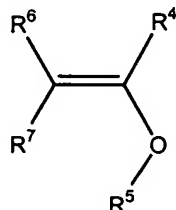
wherein

$R^1$  is H, F, CN,  $CH_3$ , or  $C_{1-6}$  fluoroalkyl,

$R^{2a}$  and  $R^{2b}$  are independently H or F, and

$R^3$  is CN or COOR, wherein R is selected from the group consisting of H,  $C_{1-12}$  alkyl and  $C_{1-12}$  fluoroalkyl, or is selected so as to render  $R^3$  acid-cleavable; and  
 a second monomer having the structure of formula (II)

(II)



wherein

$R^4$  is H,  $C_{1-12}$  alkyl,  $C_{3-15}$  alicyclic, or fluorinated  $C_{3-15}$  alicyclic,

$R^5$  is  $C_{1-12}$  alkyl,  $C_{1-12}$  alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or  $C_{3-15}$  alicyclic, or  $R^4$  and  $R^5$  together form a five-, six-, or seven-membered ring,

$R^6$  is H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl, or  $R^4$  and  $R^6$  together form a five-, six-, or seven-membered ring, and

$R^7$  is H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl, or  $R^7$  and  $R^5$  together represent  $-X-(CR^8R^9)_n-$ , in which case  $R^4$  and  $R^6$  are H, X is O or  $CH_2$ , n is 1 or 2,  $R^8$  and  $R^9$  are H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl, or together form an oxo moiety ( $=O$ ), with the proviso that when  $R^8$  and  $R^9$  together form  $=O$ , n is 1,

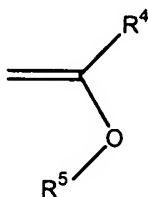
wherein any of  $R^1$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ , and  $R^7$  may be further substituted with an inert, nonhydrogen substituent.

2. (Amended) The copolymer of Claim 29, wherein  $R^1$  is  $CF_3$ .

14. (Amended) The copolymer of Claim 13, wherein R is selected from the group consisting of 2-methyl-2-adamantyl, 2-methyl-2-isobornyl, 2-methyl-2-tetracyclododecenyl, 2-methyl-2-dihydrodicyclopentadienyl-cyclohexyl, 1-methylcyclopentyl, and 1-methylcyclohexyl.

15. (Amended) The copolymer of Claim 1, wherein the second monomer has the structure of formula (III)

(III)



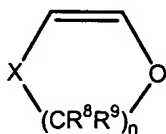
wherein:

$R^4$  is H,  $C_{1-12}$  alkyl,  $C_{3-15}$  alicyclic, or fluorinated  $C_{3-15}$  alicyclic; and

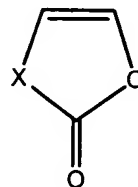
$R^5$  is  $C_{1-12}$  alkyl,  $C_{1-12}$  alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or  $C_{3-15}$  alicyclic.

16. (Amended) The copolymer of Claim 1, wherein the second monomer has a structure selected from the group consisting of (IV), (V), and (VI)

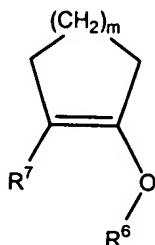
(IV)



(V)



(VI)



wherein:

$R^6$  is H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl;

$R^7$  is H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl;

X is O or CH<sub>2</sub>;

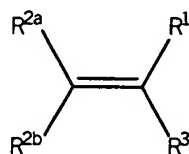
m is an integer between 1 and 3; and

R<sup>8</sup> and R<sup>9</sup> are H, C<sub>1-12</sub> alkyl, or C<sub>1-12</sub> fluoroalkyl.

23. (Amended) A process for generating a resist image on a substrate, comprising the steps of:

(a) coating a substrate with a film of a photoresist comprised of a radiation-sensitive acid generator and a copolymer synthesized from a first monomer having the structure of formula (I)

(I)



wherein

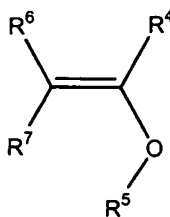
R<sup>1</sup> is H, F, CN, CH<sub>3</sub>, or C<sub>1-6</sub> fluoroalkyl,

R<sup>2a</sup> and R<sup>2b</sup> are independently H or F, and

R<sup>3</sup> is CN or COOR, wherein R is selected from the group consisting of H, C<sub>1-12</sub> alkyl and C<sub>1-12</sub> fluoroalkyl, or is selected so as to render R<sup>3</sup> acid-cleavable, with the proviso that when R<sup>3</sup> is CN, then R<sup>1</sup> is CF<sub>3</sub> and R<sup>2a</sup> and R<sup>2b</sup> are H; and

a second monomer having the structure of formula (II)

(II)



wherein

R<sup>4</sup> is H, C<sub>1-12</sub> alkyl, C<sub>3-15</sub> alicyclic or fluorinated C<sub>3-15</sub> alicyclic,

R<sup>5</sup> is C<sub>1-12</sub> alkyl, C<sub>1-12</sub> alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C<sub>3-15</sub> alicyclic, or R<sup>4</sup> and R<sup>5</sup> together form a five-, six-, or seven-membered ring,

R<sup>6</sup> is H, C<sub>1-12</sub> alkyl, or C<sub>1-12</sub> fluoroalkyl, or R<sup>4</sup> and R<sup>6</sup> together form a five-, six-, or seven-membered ring,

R<sup>7</sup> is H, C<sub>1-12</sub> alkyl, or C<sub>1-12</sub> fluoroalkyl, or R<sup>7</sup> and R<sup>5</sup> together represent

AS  
cont

$-X-(CR^8R^9)_n-$ , in which case  $R^4$  and  $R^6$  are H, X is O or  $CH_2$ , n is 1 or 2,  $R^8$  and  $R^9$  are H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl, or together form an oxo moiety ( $=O$ ), with the proviso that when  $R^8$  and  $R^9$  together form  $=O$ , n is 1,

wherein any of  $R^1$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ , and  $R^7$  may be further substituted with an inert nonhydrogen substituent;

(b) exposing the film selectively to a predetermined pattern of radiation so as to form a latent, patterned image in the film; and

(c) developing the latent image with a developer.

24. (Amended) In a lithographic photoresist composition comprised of a polymer transparent to deep ultraviolet radiation and a radiation-sensitive acid generator, the improvement comprising employing as the polymer a copolymer synthesized from a first monomer having the structure of formula (I)



wherein

$R^1$  is H, F, CN,  $CH_3$ , or  $C_{1-6}$  fluoroalkyl,

$R^{2a}$  and  $R^{2b}$  are independently H or F, and

$R^3$  is CN or COOR, wherein R is selected from the group consisting of H,  $C_{1-12}$  alkyl and  $C_{1-12}$  fluoroalkyl, or is selected so as to render  $R^3$  acid-cleavable, with the proviso that when  $R^3$  is CN, then  $R^1$  is  $CF_3$  and  $R^2$  is H, and

a second monomer having the structure of formula (II)



wherein

*AS cont*

$R^4$  is H,  $C_{1-12}$  alkyl,  $C_{3-15}$  alicyclic, or fluorinated  $C_{3-15}$  alicyclic,

$R^5$  is  $C_{1-12}$  alkyl,  $C_{1-12}$  alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or  $C_{3-15}$  alicyclic, or  $R^4$  and  $R^5$  together form a five-, six-, or seven-membered ring,

$R^6$  is H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl, or  $R^4$  and  $R^6$  together form a five-, six-, or seven-membered ring;

$R^7$  is H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl, or  $R^7$  and  $R^5$  together represent  $-X-(CR^8R^9)_n$ , in which case  $R^4$  and  $R^6$  are H, X is O or  $CH_2$ , n is 1 or 2,  $R^8$  and  $R^9$  are H,  $C_{1-12}$  alkyl, or  $C_{1-12}$  fluoroalkyl, or together form an oxo moiety ( $=O$ ), with the proviso that when  $R^8$  and  $R^9$  together form  $=O$ , n is 1,

wherein any of  $R^1$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ , and  $R^7$  may be further substituted with an inert nonhydrogen substituent.

Add new claims 29-31 as indicated in Appendix C. The new claims are reproduced below:

*Al*

29. (New) The copolymer of claim 1, wherein  $R^1$  is H, F, CN,  $CH_3$ ,  $CF_3$ ,  $CF_2H$ , or  $CFH_2$ .

30. (New) The copolymer of claim 29, wherein at least one of  $R^1$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ , or  $R^7$  is further substituted with an inert nonhydrogen substituent.

31. (New) The copolymer of claim 30, wherein the inert nonhydrogen substituent is selected from the group consisting of F,  $C_{1-12}$  alkyl,  $C_{1-12}$  alkoxy,  $C_{1-12}$  alkenyl,  $C_{1-12}$  alkenyloxy,  $C_{1-12}$  fluoroalkyl,  $C_{1-12}$  fluoroalkoxy, and  $C_{1-12}$  fluoroalkenyl.

#### REMARKS

With the present amendment, claims 1, 2, 14-16, 23, and 24 have been amended and new claims 29-31 have been added. The amendments and new claims find support throughout the original disclosure, as indicated in the following table:

CLAIM(S)	CLAIM ELEMENT (PREVIOUSLY RECITED ELEMENTS NOT INCLUDED)	LOCATION OF SUPPORT
1, 23, and 24	$R^1$ is H, F, CN, $CH_3$ , or $C_{1-6}$ fluoroalkyl.	Page 5, line 2.
1, 15, 23, and 24	$R^4$ is H, $C_{1-12}$ alkyl, $C_{3-15}$ alicyclic, or fluorinated $C_{3-15}$ alicyclic.	Page 5, line 10.